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"KNOWLEDGE AND PRACTICES OF GENERAL PRACTITIONERS OF DISTRICT PESHAWAR ABOUT SCHIZOPHRENIA"

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ABSTRACT

Schizophrenia with its disabling features has been placed in the top ten of global burden of disease and is associated with long-term decline in functional ability. General Practitioners not only have an important role in treating patients with an established diagnosis of schizophrenia but they can also contribute significantly by identifying people in early stages of psychosis as they are the first hand medical help available and the duration of untreated psychosis is a good indicator of patient's prognosis.

This cross sectional survey, conducted at the clinics of General Practitioners, was designed to assess the knowledge and practices of general practitioners in Peshawar on diagnosis and treatment of schizophrenia. A semi structured questionnaire was used to assess their knowledge and practices regarding schizophrenia. The Knowledge/Practice was then categorized as good or poor based on their responses to the questions of the administered questionnaire.

Overall, the results showed that the knowledge and practices of general practitioners of district Peshawar were poor regarding schizophrenia and may be responsible for delayed diagnosis, inadequate treatment and poor prognosis.

KEY WORDS: Knowledge, Practice, Schizophrenia, General Practitioner.

DEDICATION

This effort is dedicated to my Family, Friends and Teachers for their patience and showing great love & affection for me.

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Dr. Muhammad Irfan

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LIST OF ABBREVIATIONS

CPSP	College of Physicians and Surgeons Pakistan
DALYs	Disability-Adjusted Life Years
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders
GP	General Practitioner
ICD-10	International Classification of Disease-10
MRI	Magnetic Resonance Imaging
PMDC	Pakistan Medical and Dental Council
SPSS	Statistical Package for Social Sciences
YLDS	Years of Life Lived With Disability

INTRODUCTION

Schizophrenia is a disorder which involves chronic or recurrent psychosis and can lead to long-term decline in functional ability[1]. It is placed in the top ten causes of disability in the Global Burden of Disease because it has an early adulthood onset, lifelong course, lack of social acceptability and incapacitating symptoms, which collectively make it one of the most disabling and financially catastrophic disorders[2]. In 1990, the estimated loss in DALY's due to schizophrenia and associated disorders was around 13 million representing almost 1% of burden of the disease from all causes and was ranked 26th in the list[2]. By the year 2020, Schizophrenia is projected to be in 20th position with a DALY's loss of more than 17 million and 1.25% of the overall burden[2]. It is estimated to have a lifetime risk of 0.2 to 0.7%[3], with 11/ 100,000 as an annual incidence[4]. The course of illness for an individual patient is difficult to predict. About 10 % of patients recover from an initial episode and do not experience any further impairment but the majority i.e., 55 % has chronic symptoms and the remainders experience an intermittent course[5]. Relapse of psychosis is highly associated with discontinuation (& non compliance) of antipsychotic medication, as well as with substance abuse, psychosocial stressors, and physical illness [6-11].

Schizophrenia affects about 24 million people worldwide with more than 50% of these, not receiving appropriate care and out of 90 % of these, residing in developing countries, Pakistan being one of them[12]. Variation in the prevalence of schizophrenia across geographic regions, populations and ethnic groups has been suggested but not confirmed[13]. The exact prevalence of schizophrenia in Pakistan is not known which prevents the making of national level strategies to combat this incapacitating and burdensome illness. Taking in account the global prevalence and the draft of “Assessment of Health Status & Trends in Pakistan”, the estimated prevalence of schizophrenia in Pakistan may be 1-2% in the general population[14] although it varies among rural and urban population of various provinces. In Punjab, it is 2.5% for urban while that in rural is 2%. In Sindh, it is 2% for urban while 1.5% for rural population. In Khyber Pakhtunkhwa, it is estimated to be 2% in urban and 2.5% for rural population. Baluchistan has the lowest with 1% each in urban and rural population[15].

This is a well known fact that Schizophrenia is best treated in specialty clinics but there is a very low number of Psychiatrists and specialty clinics and centers for the diagnosis and treatment of schizophrenia in Pakistan[15]. General Practitioners, therefore, have an important role in treating the cases with an established diagnosis

of schizophrenia[16] as well as in identifying people in the early stages of psychosis[17] as they are mostly the first hand medical help available. They come across the diagnosis in a variety of contexts including initial presentation, provision of support to family members, evaluation of concurrent medical illness, management of medication side effects and primary treatment when specialty options are not available and offer an effortless and non-stigmatizing access to health care, to the people[18]. Interestingly, there are only a few studies that focus on the knowledge and practice of General practitioners in dealing with patients of schizophrenia around the globe[19-22]. Therefore, it was decided to conduct a study to assess the knowledge and practices of General Practitioners of district Peshawar about Schizophrenia to highlight the magnitude of the issue and to address the gaps in knowledge and practice in this context and to make plans for improvement, if required.

In Chapter 1, we will review the existing literature on schizophrenia, the role of general practitioners and the situation of general practice in Pakistan. In Chapter 2, we will present the details of the Original study conducted while Chapter 3 focuses on the tables and figures of the Original study. Chapter 4 and 5 describe the references and the proforma used to assess the knowledge and practices of General Practitioners of district Peshawar about Schizophrenia.

CHAPTER 1: LITERATURE REVIEW

1.1 GENERAL PRACTICE IN PAKISTAN

General practitioners (GPs) constitute the majority of health care providers in most parts of the world, treating major bulk of patients and serving as the back bone of any health care system[23]. They make up about 85% of all the registered doctors and are responsible for managing approximately 80% of patients in Pakistan[23]. However, studies conducted in Pakistan show lack of knowledge and essential expertise in practice of general practitioners' regarding basic health issues[23-25]. The situation is even worse in rural areas of Pakistan, comprising of 66% population of the country, as specialists and better health facilities are often concentrated in cities creating an imbalance in health service provision[26]. So, comparatively, there is a poor quality of care in rural areas and therefore higher chance of misdiagnoses or inappropriate referral.

There can be many reasons including the fact that most of the general practitioners do not possess any additional qualification after graduating from medical school and are not re assessed thereafter for their competency[27]. This creates professional isolation by virtue of staying away from the teaching atmosphere, having none or few opportunities to improve their existing knowledge[27].

General practice in Pakistan is comparatively a new and an underdeveloped specialty of medicine with formal training program by the name of Family Medicine initiated by College of Physicians and Surgeons Pakistan (CPSP) in 1992[28]. Soon after, this training program got discontinued and has restarted just a few years back[28]. Till date, a very few number of institutions are recognized for the training and the total number of fellows of CPSP in the subject of Family Medicine are just 43[29]. So all the other general practitioners in Pakistan, unless qualified from abroad with degrees like Members of Royal College of General Practitioners, are just medical school graduates. They need regular program of continuous medical education formulated by Pakistan Medical and Dental Council, the national health regulatory authority, followed by establishing a competency assurance system to ensure the best possible health care delivery to the public[30].

Like other developing countries, the number of Psychiatrists for the diagnosis and treatment of schizophrenia is very low[15]. Thus, Pakistan is a good case to advocate the importance of the role of general practitioners in this regard[16, 17] as they can help in treating the psychiatric disorders, which are reported as the third most common reason for consultation in primary care, in an unstigmatized manner[31, 32].

1.2 INTRODUCTION TO SCHIZOPHRENIA

Schizophrenia, apart from being in the top ten list of the Global Burden of Disease [2, 33], is also ranked 6th as a cause of disability worldwide, measured by Years of Life lived with Disability[34]. The word schizophrenia, roughly translated as “splitting of the mind” is derived from the Greek roots schizein “to split”, and phren “mind” [35, 36]. A detailed case report by John Haslam and accounts by Phillipe Pinel in 1809, are often considered as the earliest reported cases[37, 38].

Schizophrenia is estimated to reduce the life expectancy by approximately 10 years. Schizophrenia, according to the Global Burden of Disease Study, causes a high degree of disability accounting for 1.1% of the total disability-adjusted life years (DALYs) and 2.8% of years lived with disability (YLDs). In the age group 15–44 years, it is the 8th leading cause of DALYs worldwide, according to the World Health Report [39].

Although significant advancement has been attained in the diagnosis, treatment and the disorder’s neurobiological substrates, a comprehensive knowledge of its origins and pathogenic mechanisms is yet to be acquired[40].

1.3 EPIDEMIOLOGY OF SCHIZOPHRENIA

Psychotic disorders (divided over 12 different diagnostic categories) have a total lifetime prevalence of 3.5%[41]. For Schizophrenia, the incidence is relatively low (11 to 15.2 per 100,000) [4, 42] with wide variation of rise and fall in different populations including those with co morbidities [43, 44] but the prevalence remains substantially variable across populations, ethnic groups and geographic regions with the consideration of using a different type of prevalence estimate[45, 46], tendency to start early in adult life and become chronic[47]. The range of 1-2.5% has also been reported in various areas of Pakistan [15].

At an average, it is accepted that schizophrenia affects 1% of the population, with similar rates across different countries, cultural groups, and sexes [48].

Schizophrenia typically presents in early adulthood and has a tendency to develop between 16 and 30 years of age, mostly persisting throughout the patient's lifetime[48]. An increase in onset after puberty, which continues throughout adolescence and peaks in the twenties, is reported which then start decreasing from the thirties and tends to tail off in the fifties[49].

Childhood-onset schizophrenia is defined by an onset of psychotic symptoms before 13 years of age[50]. The illness occurs at a younger age in those with positive family history of schizophrenia[51]. Since the

practice of psychiatry in Pakistan is mostly “General Adult” based, a patient of schizophrenia with a childhood or adolescent onset may be too late to present, in terms of prognosis. General Practitioner may have a very important role in diagnosing these cases early when such patients are brought to them with psychotic symptoms attributed to various cultural issues.

With a gender ratio of 1.4:1 male: female, Schizophrenia is more common in men than women[44, 52]. Studies show that the age of onset of disease is earlier in males than in females by 3 to 5 years, regardless of culture[53]. Typically, men exhibit symptoms at an earlier age with a worse prognosis. The peak age of onset is in the early twenties, with very few cases occurring after 45 years of age[54].

The presence of Schizophrenia in African and Caribbean people residing in the United Kingdom, compared to the native white population was reported to be 6 times drawing attention to cultural considerations[55]. The rates are higher in the children of migrants[56]. This may suggest that either the perceived discrimination of the ethnic minority groups or some factor closely related to it is contributing to their increased risk of schizophrenia[57].

In the “Ethnic Minority Psychiatric Illness Rates in the Community” (EMPIRIC) study, the prevalence of psychosis, among participants of Caribbean, Irish, Bangladeshi, Pakistani and Indian ethnicities, was

three times higher in those experiencing verbal racism, and five times higher in those having a racist physical attack, than in those who did not, supporting the above mentioned social hypothesis[58].

There is a two way relationship between Schizophrenia and unemployment/ singleness as these increases the risk of developing schizophrenia and subsequently schizophrenia increases the risk of unemployment and singleness[59]. Even in the developed countries, although employment rates may be higher for them but they still are unable to fully support themselves[60]. In Pakistan, psychiatric disorders are more common in population with low socioeconomic status in rural areas and dominantly involve the males [61].

Area of residence also has an important effect on the rates of schizophrenia. Residing in areas of increasing population density increases the hospitalization risk in men with vulnerability for schizophrenia which is expressed as poor cognitive and social abilities [62, 63].

There is evidence that schizophrenia is more common in those born in cities, and that the larger the city and the longer a person has lived there, the greater the risk[42]. Schizophrenia is also thought to be related to lower social class[64]. Material deprivation is also likely to influence admission rates for psychosis but social fragmentation has the greatest effect[65].

1.4 SYMPTOMS OF SCHIZOPHRENIA

In general population, 4.4% report incident psychotic symptoms[66]. There is mostly a prodromal period before the onset of psychosis which is characterized by various mental disturbances like negative symptoms, attenuated and brief transient frank psychotic symptoms, cognitive impairments, and a marked decline is observed in social functioning and quality of life[67].

Eugen Bleuler described the main symptoms of schizophrenia in 1908 as 4 A's: flattened Affect, Autism, impaired Association of ideas and Ambivalence[68]. Kurt Schneider, a German psychiatrist considered certain symptoms as characteristic of schizophrenia and thus called these as “first rank symptoms”[69], [70].

The characteristic symptoms of schizophrenia fall into broad categories of positive and negative symptoms with other associated symptoms of cognitive impairment and affective disturbance [33].

1.4.1 POSITIVE SYMPTOMS

These are synonymous with psychosis. "Positive" refers to the active quality of these symptoms, whose presence is abnormal. Positive symptoms are correlated with first-time diagnosis and hospital admission, but have little predictive value for long-term course. Delusions are the most common symptom, occurring in 65 percent of patients[71, 72]. Hallucinations and thought disorganization each are

described in about 50 percent of patients [73, 74]. A large number of patients experience a combination of delusions, hallucinations, and disorganization[71]. Positive symptoms are the most responsive to pharmacological treatment, though they may wax and wane [75].

1.4.2 NEGATIVE SYMPTOMS

Negative symptoms represent the diminution or absence of normal characteristics and include flat/ blunted affect and emotion, alogia (poverty of speech), anhedonia (inability to experience pleasure), asociality (lack of desire to form relationships), and avolition (lack of motivation) [33, 76]. These deficits may occur months or years before the onset or detection of psychotic symptoms [77] and are moderately correlated with functional incapacity, particularly at work[78, 79]. Evidence suggests that patients suffering from schizophrenia often exhibit a normal or even increased level of emotionality, especially in response to negative events[80]. Contradictory evidence shows that patients with schizophrenia experience both receptive and expressive deficits[81, 82]. That is, they not only appear blank to others, but see the people around them in the same way.

1.4.3 OTHER SYMPTOMS

Schizophrenia is associated with a wide range of deficits in neurocognitive function including attention, memory, language and executive function[83, 84]. Significant deficits are present by birth,

followed by moderate decline additionally with the onset of active illness, in most cases[85-87]. School performance and cognitive testing of individuals who later developed schizophrenia, when reviewed retrospectively, showed a pattern of poor performance [88, 89]. Cognitive problems are highly correlated with functional impairment of the patient[90].

The combination of inappropriate, odd and blunted expression is the most frequently observed affective disturbance and is stigmatizing in social settings [91]. In early schizophrenia, depressive mood is reported in upto 81% of individuals with first-episode while depression is reported in about 22% of those with first-episode [92, 93]. Suicide is also reported commonly either at the beginning of treatment or after the resolution of an acute episode or while shifting from hospital to outpatient care[94]. Overall, mood disturbance occurs at about four times the rate seen in the general population[95].

Few other symptoms worth mentioning include disorganization syndrome (chaotic speech, thought, and behavior)[96], catatonia (an altered state of motor activity and attention), echopraxia (inappropriately mirroring movements), echolalia (repeating speech in a rigid and stereotypic way), stereotypic and bizarre movements, stuporous appearance or may be internally preoccupation with other psychotic symptoms[33].

1.5 DIAGNOSIS OF SCHIZOPHRENIA

The presentation of schizophrenia varies significantly with a wide range of psychotic manifestations and varying levels of functional incapacity. Schizophrenia is a challenging diagnosis because there are neither pathognomonic features nor confirmatory laboratory or neuropsychological tests.

The most widely used diagnostic criteria for schizophrenia were developed by WHO (International Classification of Diseases, ICD-10) and American Psychiatric Association (Diagnostic and Statistical Manual of Mental Disorders, DSM-IV-TR) with little differences. The ICD-10 criteria emphasize more on Schneiderian First Rank Symptoms suggested by Kurt Schneider[97, 98]. The ICD 10 includes Paranoid Schizophrenia; Hebephrenic Schizophrenia; Catatonic Schizophrenia; Undifferentiated Schizophrenia; Residual Schizophrenia; Post Schizophrenic Depression; Simple Schizophrenia; under the sub category F 20[98-106].

1.6 AETIOLOGY OF SCHIZOPHRENIA

The main risk factors are genetic causes, pregnancy and delivery complications, slow neuromotor development, and deviant cognitive and academic performance[107].

1.6.1 NEURODEVELOPMENTAL AND GENETIC CAUSES

Recent studies suggest that abnormalities can be observed years before the onset of positive symptoms[108].

The concordance rate for schizophrenia between monozygotic twins is 50 percent[109]. Studies have identified possible gene associations e.g., neuregulin-1 gene, presence of a susceptibility gene (ZNF804A) and increase in gene structural variants[110-114]. It is now widely suspected that there is no single genetic determinant and multiple genetic factors work in combination to create the vulnerability[115].

Advanced paternal age is more prevalent in schizophrenia patients and insults to fetal development occurring in first and second trimester and exposure to psychoactive substances, especially cannabis are correlated with an increased risk[116-122].

1.6.2 ENVIRONMENT AND SOCIAL CAUSES

Urbanization, social and racial adversity, family dysfunction and unemployment have all been proposed as risk factors [48, 63, 123].

It is suggested that winter or spring birth and prenatal exposure to infections is associated with developing schizophrenia later [124,125].

Childhood experiences of abuse or trauma and unsupportive dysfunctional parental relationships have also been noted as risk factors for a diagnosis of schizophrenia[126, 127].

There is a two way relationship is proposed to exist between schizophrenia and drugs of abuse or alcohol[128].

1.6.3 DOPAMINE HYPOTHESIS OF SCHIZOPHRENIA

It has been suggested that positive symptoms are due to hyperactivity of dopaminergic projections from the midbrain while negative and cognitive symptoms are correlated with a decrease in prefrontal activity of dopaminergic pathways [129, 130].

1.6.4 STRUCTURAL BRAIN CHANGES

Schizophrenic brains are smaller than normal brains, with ventricular enlargement and thinning of neuritic processes without loss of neuronal bodies[131-133]. Medial temporal lobes are found to be smaller in the patients of schizophrenia[134, 135].

1.7 COURSE OF SCHIZOPHRENIA

Schizophrenia has a quite consistent natural history and longitudinal course. Many patients treated in their first episode of schizophrenia show a good response to treatment and achieve some symptom remission and level of recovery, but recurrent episodes lead to significant neurological deterioration[136]. The role of General practitioner is vital in the early diagnosis of such cases where they sometimes receive the patients with other co morbidities.

Few patients once diagnosed of having schizophrenia, enjoy complete remission. Living in a house hold of 3 or more adults, later age of onset and taking antipsychotics predict complete remission[137].

The overall rate of recovery during the early years of the illness is low but some patients with first-episode schizophrenia can achieve sustained symptomatic and functional recovery[138]. Patients in remission require markedly less health care resources[139].

It is also a well known fact that premorbid functioning is associated with better response to treatment, fewer extra pyramidal symptoms and better recovery[140]. The duration of untreated psychosis also significantly affects the course of the illness, its symptom severity

and outcome of the illness. The longer the duration of untreated psychosis, the poor is the prognosis[141].

In a nutshell, Schizophrenia is associated with a 20 percent reduction in life expectancy and worse physical health than in the general population[142, 143].

1.7.1 MORTALITY

Patients with schizophrenia have a higher mortality and nearly a quarter of deaths resulting from unnatural causes[144]. Suicide rates in schizophrenia and other psychotic disorders appear to be 20-fold higher[145]. At the same time deliberate self harm or suicide attempt is also thought to be a predictor of relapse[146].

1.7.2 COMORBIDITY

The most common comorbid condition is substance abuse. As many as 80 percent of patients of schizophrenia abuse alcohol, illicit drugs, or prescription medications[147-149].

Patients of schizophrenia with comorbid cannabis abuse have more positive symptoms and show more violent behaviour[150].

Increased rates of chronic medical conditions like coronary artery disease, chronic obstructive pulmonary conditions, hepatitis, hypothyroidism, diabetes mellitus, fluid and electrolyte disorders are observed in patients with schizophrenia[151].

1.8 MANAGEMENT OF SCHIZOPHRENIA

The introduction of chlorpromazine in the 1950s, changed the complete scenario of management of schizophrenia as previously, the care of patients suffering from schizophrenia was limited to various rehabilitative, psychotherapeutic and custodial interventions. The advent of relatively safe and effective pharmacologic treatments paved the path for marked improvement in symptoms and functioning and made it possible for the majority of the patients to live in community settings[152]. Effective treatment interventions using a combination of best possible pharmacotherapy and targeted psychosocial treatments are elevating expectations about the prospects of functional recovery in patients with schizophrenia[153].

1.8.1 PSYCHOSOCIAL INTERVENTIONS

There are various guidelines for the treatment of schizophrenia developed across the world. These recommend nearly similar pharmacotherapy but have variations in the type of psychosocial interventions which describes their importance[154, 155].

Psychological interventions for schizophrenia include cognitive behavioral therapy for symptoms, cognitive remediation for neurocognitive deficits, motivational interventions for substance misuse and for non-adherence to medication and family

interventions [156]. Social skills' training is planned to deal with the deficits in patient's communication and social interactions[157]. A recent study, reported in Pakistan showed promising preliminary results with the use of CBT in patients with psychosis[158].

Vocational rehabilitation is useful at getting patients into the place of work, although they may rarely work in a long-term competitive employment[159].

1.8.2 PHARMACOLOGICAL TREATMENT

There are three basic classes of medications (typical, atypical and dopamine partial agonist antipsychotics) which act principally on dopamine systems[160]**.** The typical antipsychotic agents have been associated with relatively high incidence of adverse effects ranging from acute dystonia to akathesia and akinesia to tardive dyskinesia and neuroleptic malignant syndrome[161]. Atypical agents with greater affinities for serotonin and norepinephrine[162] lead the patients to receive significantly less prescriptions for anticholinergics[163]. Clozapine, dopamine partial agonist, remains the treatment of choice for refractory schizophrenia, although it is well known to cause blood dyscrasias and other serious adverse effects such as seizures, intestinal obstruction, myocarditis, thromboembolism and cardiomyopathy[164].

Obesity, type 2 diabetes mellitus, and hyperlipidemia (the metabolic syndrome) occur both with schizophrenia and with antipsychotic medications[165-168]. Cardiac risk associated with schizophrenia and with antipsychotic drugs has recently been fully appreciated[169-171]. Antipsychotic medications vary in their propensity to cause QT_C prolongation but a particular concern is with intravenous use of haloperidol, which has led to fatality and a 2007 FDA alert[172].

In Pakistan, drug non-compliance has been a major hindrance in the effective management of schizophrenia. Nearly 74% of the patients have a relapse of the illness and need frequent readmissions resulting from the non-compliance [173]. Non-affordability of drugs, unawareness of the benefits of treatment, physical side effects and unfriendly attitude of the doctors[174] are the commonest reasons for non-compliance.

1.9 GENERAL PRACTITIONERS AND SCHIZOPHRENIA

In Low and Middle Income countries, most people with schizophrenia probably receive little or no formal care. One manifestation of this is very long duration of untreated psychosis in the first episode, i.e., 132 weeks[174]. This poses a major public health problem considering that around 41.7 million people with schizophrenia may need care in these countries[175]. The general practitioners, therefore, have to play a crucial role in early diagnosis and management, as they come across these cases in various contexts. To fulfill the role, the general practitioners need diagnostic knowledge, low-threshold, easily accessible specialized services to which they can refer these patients.

The movement, and then the subsequent policies in favour of closing the mental hospitals and transferring these to community services have been campaigned for quite some time[176] and are being actively pursued recently[177]. This may also increase the role of general practitioners being the physicians readily available in the community.

Guidelines for schizophrenia management in general practice emphasize on the early diagnosis of psychosis, minimizing delays in treatment initiation, keeping an eye on the patient's condition and treatment adherence, and prompt intervention at times of relapse or psychosocial crises[178-184]. The early diagnosis of psychosis, thus,

becomes very important as it is the central part of ‘‘mental health literacy’’ which is mandatory for appropriate help-seeking[185], and the general practitioners can play a pivotal role in this regard.

General practitioners may be less confident in the clinical skills than a psychiatrist regarding schizophrenia but can see themselves complementing the psychiatrist with an active and useful role[186]. The level of confidence can be improved by including mental health in the undergraduate curriculum and by providing pre service training to the general practitioners. Once they feel confident about the knowledge, the universal screening should be emphasized to improve detection rates of mental disorders including schizophrenia for which brief mental health screening questionnaires might help[187].

Unfortunately, there are only a few studies that focus on the knowledge and practice of General practitioners about schizophrenia, around the globe[19-22]. The authors are not aware of studies from other developing countries which address this issue except a study in a semi urban small border district in Pakistan with a smaller sample size using the same proforma[22]. It was therefore decided to conduct a study to assess the knowledge and practices of General Practitioners about schizophrenia in a major urban center, Peshawar, to identify the gaps in knowledge and practice in service delivery, and chalk out plans to improve it, if needed.

CHAPTER 2: ORIGINAL STUDY

2.1 OBJECTIVES

To assess the knowledge and practices of general practitioners in district Peshawar on diagnosis and treatment of schizophrenia.

To estimate the frequency of patients of schizophrenia, seen in general practice in district Peshawar.

2.2 SUBJECTS AND METHODS

2.2.1 Sample

This cross sectional survey was conducted at the clinics of General Practitioners in Peshawar from August 2009 to December 2011. A list of General Practitioners of Peshawar, enrolled with provincial Health Regulation Authority was obtained and all the 135 listed General Practitioners were contacted for the purpose of the survey. Unlike the countries such as UK, in Pakistan the GPs are not defined by their registration or after a specified period of training. For the purpose of this study a General Practitioner was defined as, "A licensed medical graduate registered with Health Regulatory Authority who gives personal, primary and continuing care to individuals, families and a practice population irrespective of age, sex and illness"[188].

All the enlisted (n=135) were approached to give consent to participate in the study. Out of 135, 114 consented to participate in the study and were included through purposive, non-probability sampling. The study was given ethical approval by the institutional review and ethical board, Postgraduate Medical Institute, Lady Reading Hospital Peshawar.

Twenty One General Practitioners did not consent to participate in the study.

It is worth mentioning that most of the general practices in Peshawar are single doctor based practices providing service for fee. The GPs only provide curative services and patients meet the treatment costs through out of pocket expenses.

2.2.2 Questionnaire

The participating General Practitioners were then requested to answer a semi structured questionnaire (Appendix A) consisting of three parts namely, General Information, Knowledge and Practices related to Schizophrenia. This questionnaire has been used by Simon AE et al in their seminal study and has been validated for use with GPs[19]. As this questionnaire was developed in Switzerland where the health system and the practice of GP differs markedly from that in Pakistan, the questionnaire was modified to reflect the practice and health services in Pakistan. However, we retained the major domains, questions and content as developed by Simon AE et al[19]. The 17 item questionnaire consisted of 5 demographic items and 12 (partly multi-item) questions that assessed: Knowledge (symptoms of schizophrenia; early warning signs of schizophrenia; treatment; and management of schizophrenia patients) and Practice (methods used to confirm diagnosis; referrals used; and medications prescribed to schizophrenia patients) and continuing medical education of the Practitioner.

Knowledge was defined as the ability of the general practitioner to correctly identify the symptoms of schizophrenia and its related treatments and appropriate referrals. Similarly practice was defined as the ability of the general practitioner to correctly indicate their practice in diagnosing, treating and referring schizophrenia patients appropriately. The level of knowledge on schizophrenia diagnosis and treatment was assessed with two multi-item questions (K1 and K3) and five other questions (K2, K4-K7) having a maximum score of 19. A discriminating index was developed using the composite scores obtained by the general practitioners' responses to all knowledge questions. Good knowledge was defined as a composite knowledge response score of ≥ 60% and Poor Knowledge was defined with a composite knowledge score of < 60%. The practical experience of general practitioners with schizophrenia diagnosis, treatment and referrals was assessed with four multi-item questions (P1 – P4) having a maximum score of 22. A similar discriminating index using the composite scores obtained by the general practitioners' responses to all the Practice questions was developed. Adequate practice was defined as a composite practice response score of ≥ 60% and Inadequate practice was defined with a composite practice response score of < 60%.

The questionnaires were distributed in the clinics of General Practitioners along with a short briefing about the questionnaire. The questionnaires were then left at their clinics and a collection time was decided with them. The filled questionnaires were collected by re-visiting their clinics in person. However, not all the GPs provided the filled questionnaire on the decided data and there have been instances where the collection of the filled questionnaire needed many visits.

The scoring scheme based on the correct answers was developed in consultation with the data analyst. All the questions and the items of the multi-item questions regarding the knowledge and practice were marked as either correct (score=1) or incorrect (score=0).

2.2.3 Analysis

Data collected through semi structured questionnaire was analyzed using Epi Info Statistical software. The demographic details were calculated using percentages, and proportions were calculated using the discriminating index of composite scores for Knowledge and Practices of the Practitioners regarding schizophrenia.

2.3 RESULTS

There were 135 General Practitioners invited to participate in this study, in that 114 (84.44%) consented to participate and 21 (15.56%) declined to participate in the study. Majority of GPs were male (n=111, 97%).

About 13% (n=15) of the General Practitioners in this study treat more than 10 schizophrenia patients annually and a majority of them see few to none of the schizophrenia patients in Peshawar. None of them did possess any specialty training in mental health and very few (n=7, 6.1%) General Practitioners received continuing medical education regarding schizophrenia (Table 1).

The 21 General Practitioners who refused to participate gave reasons for their non-participation including “I have a busy schedule” 13 (61.9%); “I don’t see patients with schizophrenia” 6 (28.6%); and “I don’t want to fill the questionnaire” 2 (9.5%).

2.3.1 KNOWLEDGE ABOUT FREQUENT SYMPTOMS OF SCHIZOPHRENIA

The level of Schizophrenia Diagnostic knowledge of Practitioners was assessed through multiple questions. A composite score on the responses to all the seven knowledge questions (K1-K7) was estimated with the response scores ranging from 0 to 16 (Figure 2). Good knowledge was identified among 12.2% (n=14) of the

surveyed general practitioners with a composite score of ≥12. About 6% (n=7) of the general practitioners had no knowledge at all about the diagnosis and treatment of schizophrenia receiving a composite knowledge score of 0 and the remaining 81.6% (n=93) of general practitioners had very poor knowledge (Table 2).

The frequent symptoms of schizophrenia were identified correctly (≥60% correct response) by 31.5% (n=36) of the Practitioners surveyed, with a response score of ≥6. About 60% (n=69) had poor knowledge about the frequent symptoms of schizophrenia while 7.9% (n=9) appeared to have no knowledge about the disease (Figure 1). A large number of general practitioners (n=93, 81.6%) considered hallucinations and delusions to be the most frequent symptoms of Schizophrenia (Table 3).

Eighty (70.2%) general practitioners considered pharmacotherapy to be ideal for a patient with a suspected first schizophrenic episode (Table 3).

Seventy one (62.3%) general practitioners, each, considered that the first episode of schizophrenia is preceded by early warning signs and estimated the relapse risk of untreated patients during the first year after a first schizophrenic episode to be more than 60 percent. Only 15 (13.2%) considered giving antipsychotic medication for 12-24 month after a first schizophrenic episode and 16 (14.0%) considered

giving it for 3-5 years for maintenance therapy in patients with multiple episodes of illness after the remission of an episode.

Only 6 (5.3%) general practitioners could name two side effects and 25 (21.9%) reported one side effect while 83 (72.8%) could not report any side effect of antipsychotic medication. Extra Pyramidal Symptoms were the most relevant side effect reported by 27 (23.7%) general practitioners followed by weight gain reported by 4 (3.5%).

2.3.2 SCHIZOPHRENIA TREATMENT PRACTICES

A composite score on the responses to all the four practice questions (P1-P4) was estimated with the response scores ranging from 0 to 18 (Figure 3). Adequate practice was identified among 28.1% (n=32) of the surveyed general practitioners with a composite practice score of $\geq$13. About 8.8% (n=10) of the general practitioners did not conform at all to the correct practice guidelines for diagnosis and treatment of schizophrenia receiving a composite practice score of 0 and the remaining 63.1% (n=72) of general practitioners had inadequate practice methods employed in their clinics with a score of less than 13 (Table 4).

Regarding the breakdown of the practice questions about schizophrenia, a sizable majority of general practitioners (n=87, 76.3%) relied on personal history and observation over several

months for the confirmation of the diagnosis of schizophrenia. On the subject of the place of treatment, 68 (59.6%) general practitioners were of the opinion of treating patients of schizophrenia exclusively in their clinic while 45 (39.5%) considered referral to a specialist/psychiatric out-patient department and complete handover for treatment. Only 3 (2.6%) general practitioners could name four medications with their average doses while 66 (57.9%) were not able to name any medication for the treatment of schizophrenia. Forty three (37.7%) general practitioners correctly reported that prognosis of a treated patient after a first episode of schizophrenia is favourable after single episode with a possibility of maintenance of performance level (Table 5).

2.4 DISCUSSION

World Health Organization has repeatedly reiterated that most psychiatric disorders in developing countries should be treated in primary care in developing countries. This is necessitated not only by the very inadequate specialist services but this also helps to reduce stigma and institutionalization. This is also consistent with the fact which emphasize that “early detection of psychosis, minimizing delays in obtaining treatment, monitoring the patient’s condition and adherence to treatment, and prompt intervention at times of relapse or psychosocial crises”[178, 179, 187, 189-192]. Keeping this in consideration, the knowledge and practices of general practitioners appear to have an important role in managing patients with schizophrenia. This is even more appropriate when we consider the unavailability of community services in our set up[193].

The limitations of this survey should be kept in mind. The assessment of knowledge and practice was based on a cross sectional view of the GPs responses to a questionnaire. The sample in this study may not be representative of the GPs. The results of our study may not be generalisable to other settings as the training and role of general practitioners may vary in the international healthcare system[19]. However, we had a good response rate and were able to contact most of the GPs working in Peshawar District which was

even better than a similar study conducted in a small semi urban border district of Pakistan[22].

Majority of respondents were male GPs .This perhaps reflects limited number of female doctors who are mostly limited to providing obstetric services.

International multicentre survey of general practitioners indicates that the mean number of patients with chronic schizophrenia seen by general practitioners is similar across several countries and healthcare systems[194]. Although, little is known about general practitioners' experiences in treating schizophrenia, most of them are currently treating patients with schizophrenia in a small number (on average about 3 patients) which is similar to our finding where only 13.2% (n=15) treated more than 10 patients annually as compared to 53.5 % (n=61) general practitioners who didn't treat any diagnosed case of schizophrenia in a year making almost two patients on average[22, 186, 195].

It is reported internationally that 40-50% of general practitioners screen patients for mental health issues routinely but depression is often not identified[193]. When a much common condition like depression can be missed often, schizophrenia has all the chances to be missed which was obvious from our findings where 40.4% (n=46) didn't diagnose any new case in a year's time.

In our study, only 6.1% General Practitioners received continuing medical education, an essential ingredient to maintain competence, regarding schizophrenia which, however, is slightly better than none reported in the study by Akhtar et al, but far less than the 30.8% of GPs receiving recent medical education about mental health problems as reported in another study from Pakistan[22, 196].

Regarding the knowledge, only 12.3% general practitioners in our sample had adequate knowledge about schizophrenia which visibly speaks about the current state of the affair in Pakistan and is in contrast with the findings of a French study where GPs had a fair theoretical knowledge of schizophrenia symptoms[197].

As compared to the figures reported by the Swiss and a local study (62% and 64% respectively), Hallucinations and delusions were considered as the most frequently experienced symptoms of schizophrenia by 81.6% of the general practitioners in our sample[19, 22]. However, Bizzare behavior which was considered by 56% in Swiss study was considered by only 45.2% GPs of our sample[19].

General practitioners in our sample (62.3%) considering that the first episode of schizophrenia is preceded by early warning signs were much less than the Swiss study (90%) but comparable to another local study (69%) [19, 22]. This is an alarming situation as it shows the

unpreparedness of encountering schizophrenia by general practitioners.

Pharmacotherapy, alone or in possible combination with other types of therapy, was considered ideal treatment by 88% of GPs in the Swiss sample and 60% in Akhtar et al sample [19, 22]. Our results were in between the two, where 70.2% GPs considered pharmacotherapy to be ideal.

Only 13.2% and 14% GPs of our sample were able to answer correctly the duration of antipsychotic medication to be maintained for more than 12 months after first schizophrenic episode, and for at least 3 years in patients with multiple episodes of illness after remission[198]. Figures of 12.5% and 39% respectively were reported for the same in a similar study [22]. This is distressing to know as it suggest that even those patients who are diagnosed as cases of schizophrenia, may receive incomplete treatment regime leading to more chances of relapse.

Seventy one percent GPs in our sample correctly estimated the relapse risk of untreated patients during the first year after a first schizophrenic episode which was more than those correctly reported by GPs in other studies [19, 22].

Regarding their practices, the answers given to the questions in the questionnaire may not assess their actual practice, but should be

considered more of a proxy measure[199]. Only 20.2% (n=23) of the general practitioners had adequate practice in management of schizophrenia. This percentage was much less than the percentage of any practice question answered by General Practitioners in a similar study conducted in Switzerland[19].

In our sample, 76.3% GPs, each, relied on personal history and observation over several months for the confirmation of the diagnosis of schizophrenia while the GPs in Swiss study showed more reliance on Information from significant others (65%) and Family history (63%) respectively [19]. The sample in the study by Akhtar et al relied more on personal history (87.5%) and family history (70%) respectively [22]. All of these serve as important diagnostic predictors of schizophrenia[200].

As compared to a figure of 6.9% referrals of all the patients to specialists, 39.5% GPs in our sample showed the same practice which though is much bigger than that reported in the Swiss study, is far less than the 60% reported in another study [19, 22]. However 61.4% of the general practitioners were of the opinion of collaborating with the specialists which is comparable to 77.2% in the Swiss survey which is an encouraging finding [19].

Antipsychotics (one or more) were mentioned as commonly used drug for schizophrenia in their practice by 42.1% of GPs which is far

less than the figures reported in other studies (80% and 98.5% respectively) [19, 22]. A study from Pakistan reported that the problem in the rational use of psychotropic medication is due to the gaps in GPs' knowledge about the management of mental disorders[196]. This is an area of great concern as it poses serious questions not only on the practice but on the basic medical knowledge of these GPs.

The results of the study are not surprising in view of the fact that teaching and training in Psychiatry is still much limited in undergraduate curriculum in most medical schools in Pakistan. There is little or no training in psychiatry for family physicians and continuing medical education hardly exists. This may well be contributing to a long Duration of Untreated psychosis in the First Episode which is found to be more than two years in developing countries.

Although there are studies on evaluation of the training programmes for GPs[18, 201] but we believe this is a unique study assessing the knowledge and practice of doctors working in general practice about schizophrenia in a major urban area of a developing country setting. It appears that many educational programmes for GPs have been devised without assessing the prior knowledge, practice and training needs of the GPs. These findings have serious implications for

training the general practitioners in diagnosing and treating the Schizophrenia.

As the overall prevalence of schizophrenia is low, it can be argued that it will be insufficient to improve knowledge and practices of general practitioners only through educational programmes. In addition, synchronized provision of specialized services and assessment facilities for general practitioners may prove to be more important[19]. From the general practitioners' point of view, communication between the specialist and primary care services has been poor and problematic with unclear individual roles and responsibilities while treating patients with schizophrenia and this may appear to be the biggest hindrance in service provision[17, 186]. An integrated system of care should be developed with clearly defined role of GP in the chain of care, which has been a pillar of Mental Health Plan for Pakistan[202, 203]. Such a system would significantly contribute to the quality of care provided to the patients with Schizophrenia[201].

Since it has already been established that rapid social integration can be achieved if the follow up of patients with schizophrenia is arranged in general practice, the role of general practitioner for dealing with somatic symptoms of the illness and renewing/changing their anti psychotic medication can't be

emphasized any more[204, 205]. This will definitely lead to a much needed collaborative care approach[204, 206-208].

The use of universal screening by all general practitioners is needed to improve detection rates for which brief mental health screening questionnaires might be very useful and consideration should be given to the development of standardized methods, suggested by GPs during the data collection meetings with them[17, 193, 209, 210].

2.5 CONCLUSION

The findings of this study suggest that regarding schizophrenia, the knowledge and practices of general practitioners in a major urban centre in Pakistan are poor and may be one of the reasons responsible for delayed diagnosis and perhaps inadequate treatment. The training and education for general practitioners in the diagnosis and treatment of schizophrenia needs to be improved significantly through more refined, result oriented mental health education. At the same time, communication between mental health services and general practitioners need particular improvement which will not only lead to better access to services but also to knowledge sharing with GPs.

CHAPTER 3: TABLES AND FIGURES

Table 1: Characteristics of the General Practitioners surveyed (n=114)

Characteristics	Number (%)
Gender:	
Male	111 (97.4)
Female	3 (2.6)
Number of schizophrenia patients treated annually:	
None	61 (53.5)
1 – 2 patients	26 (22.8)
3 – 5 patients	8 (7.0)
6 – 9 patients	4 (3.5)
More than 10 patients	15 (13.2)
Time taken to treat a patient:	
Less than 10 minutes	22 (19.3)
10 – 20 minutes	34 (29.8)
21 – 30 minutes	18 (15.8)
More than 30 minutes	6 (5.3)
No response	34 (29.8)
Number of suspected cases of schizophrenia seen annually:	
None	46 (40.4)
1 – 2 patients	38 (33.3)
3 – 5 patients	3 (2.6)
More than 5 patients	27 (23.7)
Continuing Medical Education attended:	
Yes	7 (6.1)
No	107 (93.9)

Table 2: Composite Knowledge scores of the General Practitioners (n=114)

Composite Knowledge Scores	Number (%)
No Knowledge = 0 Score	7 (6.1)
Poor Knowledge = Scores < 12	93 (81.6)
Good Knowledge = Scores ≥12	14 (12.3)

Table 3: Correct responses of General Practitioners on multi item knowledge questions

Multi Item Knowledge Questions		Number (%)
Most frequent symptoms of Schizophrenia		
	Hallucinations/delusions	93 (81.6%)
	Social withdrawal	34 (29.8%)
	Psychosomatic complaints	64 (56.1%)
	Suicidality	68 (59.6%)
	Depression/anxiety	55 (48.2%)
	Bizarre behaviour	52 (45.6%)
	Drug misuse	74 (64.9%)
	Conflicts with parents/teachers/employe	39 (34.2%)
	Functional decline (school/work)	34 (29.8%)
Ideal treatment for a patient suspected of first episode schizophrenia		
	Psychotherapy	17 (14.9%)
	Pharmacotherapy	80 (70.2%)
	Family Therapy	60 (52.6%)
	Observe and Wait only	90 (78.9%)

Table 4: Composite Practice scores of the General Practitioners (n=114)

Composite Practice Scores	Number (%)
No Practice = 0 Score	10 (8.8)
Inadequate Practice = Scores < 13	72 (63.1)
Adequate Practice = Scores ≥ 13	32 (28.1)

Table 5: Correct responses of General Practitioners on multi item practice questions

Multi Item Practice Questions	Number (%)
General reliance on confirmation of diagnosis:	
Personal history	87 (76.3)
Family history	75 (65.8)
Information from significant others(teacher/employer)	42 (36.8)
Observation over several days and weeks	78 (68.4)
Observation over several months	87 (76.3)
Neurological assessment	74 (64.9)
Neuropsychological assessment	66 (57.9)
Other examinations (radiographic, electrophysiological)	75 (65.8)
Laboratory tests	77 (67.5)
Urine testing for drug abuse	76 (66.7)
Consultation with/referral to a specialist	39 (34.2)
Treatment alone or in collaboration with other specialists or institutions:	
Treatment exclusively in my clinic	68 (59.6)
Occasional/regular consultation with a specialist to reassess/ advise	33 (28.9)
Referral to a specialist for initial diagnosis and to establish the medication regimen, continuation of treatment in my clinic	37 (32.5)
Referral to a specialist/psychiatric out-patient department and complete handover for treatment	45 (39.5)
Commonly used antipsychotic medications and their doses:	
None	66 (57.9)
One	21 (18.4)
Two	19 (16.7)
Three	5 (4.4)
Four	3 (2.6)
Prognosis of a treated patient after a first episode of schizophrenia:	
Favourable; Single episode with maintenance of performance level is possible	43 (37.7)
Mostly several episodes with possible maintenance of performance level	49 (43.0)
Mostly several episodes with progressive decline of performance level and severe course of illness	31 (27.2)

Figure 1: Knowledge scores on the frequent symptoms of schizophrenia identified by the Practitioners

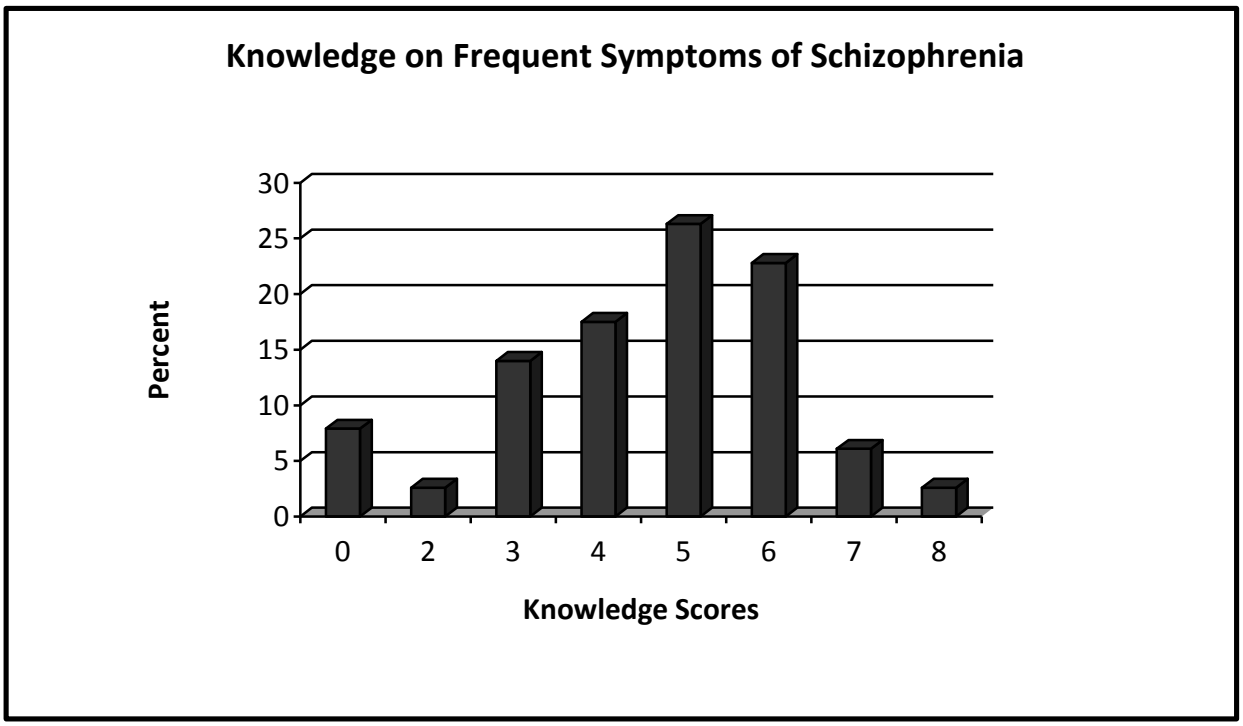


Figure 2: The distribution of composite knowledge scores of the Practitioners on schizophrenia diagnosis and treatment

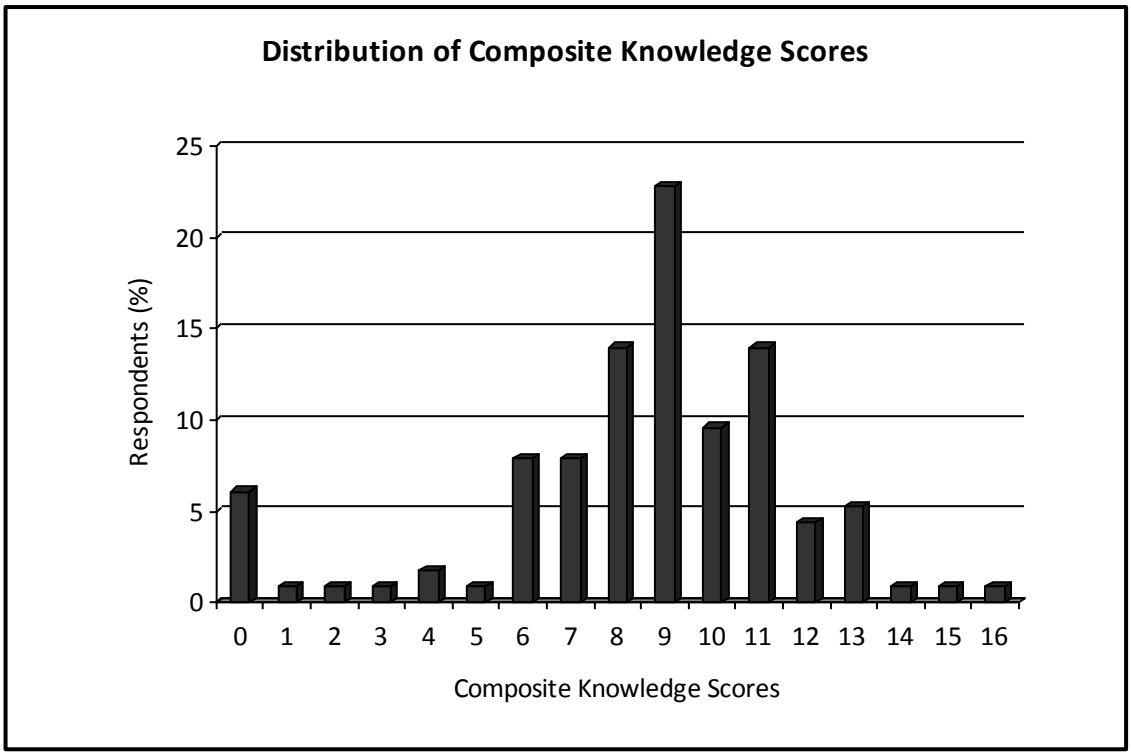
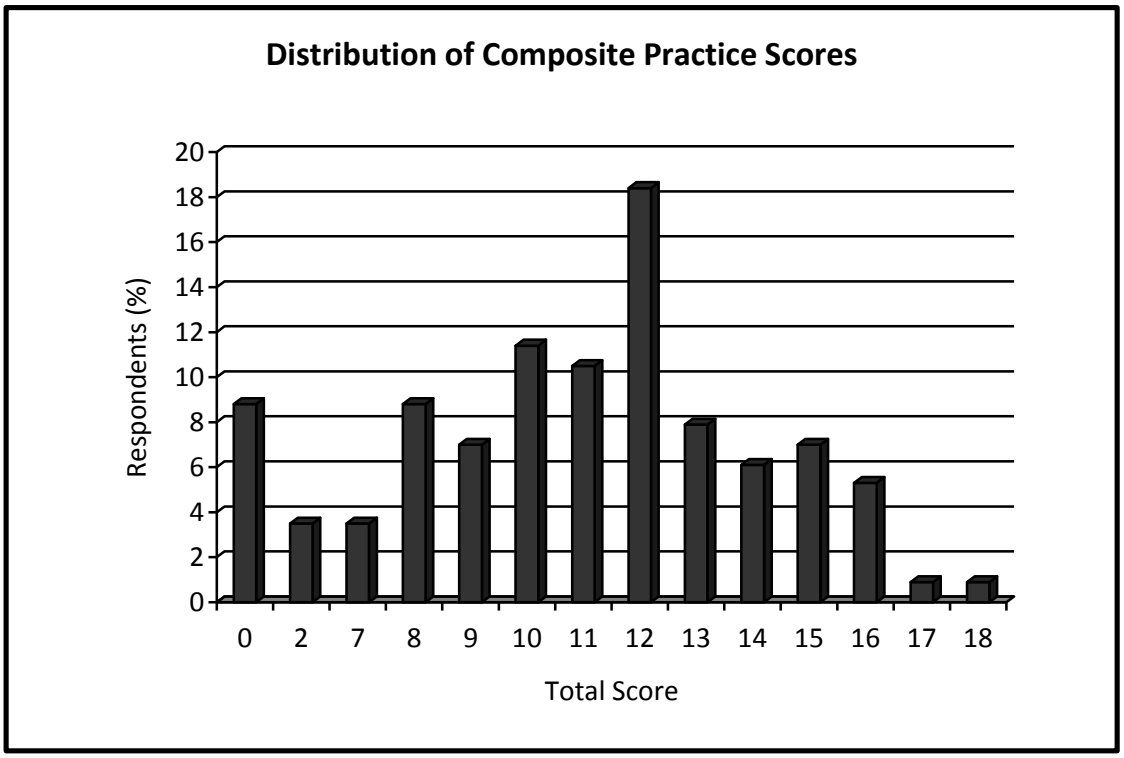


Figure 3: The distribution of composite practice scores of Practitioners on schizophrenia diagnosis, treatment and referrals



CHAPTER 4: LIST OF REFERENCES

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CHAPTER 5: APPENDIX 'A'

KNOWLEDGE AND PRACTICES OF GENERAL PRACTITIONERS OF DISTRICT PESHAWAR ABOUT SCHIZOPHRENIA

5.1 PROFORMA

Direction*: Kindly fill the proforma and where required put a ✓in the appropriate box*

Serial Number: _____ Contact Details: _____

❖ **GENERAL INFORMATION**

- Name: _____
- Gender:
  - Male ❒
  - Female ❒
- How many patients with an established diagnosis of schizophrenia do you treat annually?
  - None ❒
  - 1–2 ❒
  - 3–5 ❒
  - 6–9 ❒
  - More than 10 ❒
- How much time do you generally take for a consultation by someone with schizophrenia?
  - Less than 10 min ❒
  - 10–20 min ❒
  - 20–30 min ❒
  - More than 30 min ❒

- How many patients in whom you suspect the onset of schizophrenia do you see in your practice?
  - None ❒
  - 1–2/year ❒
  - 3–5/year ❒
  - More than 5/year ❒

❖ **KNOWLEDGE**

- Which of the following do you think are the most frequent symptoms of Schizophrenia? (more than one answer allowed)
  - Hallucinations/delusions ❒
  - Social withdrawal ❒
  - Psychosomatic complaints ❒
  - Suicidality ❒
  - Depression/anxiety ❒
  - Bizarre behaviour ❒
  - Drug misuse ❒
  - Conflicts with parents/teachers/employers ❒
  - Functional decline (school/work) ❒

- Do you think that a first episode of schizophrenia is preceded by early warning signs?
  - Yes ❒
  - No ❒

- What therapy in your thinking is ideal for a patient with a suspected first schizophrenic episode (independent of whether you treat these patients yourself)? (more than one answer allowed)
  - Psychotherapy ❒
  - Pharmacotherapy ❒
  - Family therapy ❒
  - Observe and wait only ❒

- For how long should antipsychotic medication be maintained after a first schizophrenic episode?
  - Few days ❒
  - 3–4 weeks ❒
  - 1–6 months ❒
  - 6–12 months ❒
  - 12–24 months ❒
  - 3–5 years ❒

- For how long should antipsychotic medication be maintained in patients with multiple episodes of illness after the remission of an episode?
  - Few days ❒
  - 3–4 weeks ❒
  - 1–6 months ❒
  - 6–12 months ❒
  - 12–24 months ❒
  - At least 3–5 years ❒

- How high do you estimate the relapse risk of untreated patients during the first year after a first schizophrenic episode?

  _____%

- Which are the two clinically most relevant side-effects of antipsychotic treatment?

  _____

  _____

❖ **PRACTICES**

- What do you generally do to confirm the diagnosis? (more than one answer allowed)
  - Personal history ❒
  - Family history ❒
  - Information from significant others(teacher/employer) ❒
  - Observation over several days and weeks ❒
  - Observation over several months ❒
  - Neurological assessment ❒
  - Neuropsychological assessment ❒
  - Other examinations(radiographic,electrophysiological) ❒
  - Laboratory tests ❒
  - Urine testing for drug abuse ❒
  - Consultation with/referral to a specialist ❒
  - Other (specify) _____

- Are these patients treated by you alone, or in collaboration with other specialists or institutions? (more than one answer allowed)
  - Treatment exclusively in my clinic ❒
  - Occasional/regular consultation with a specialist to reassess/ advise ❒
  - Referral to a specialist for initial diagnosis and to establish the medication regimen, continuation of treatment in my clinic ❒
  - Referral to a specialist/psychiatric out-patient department and complete handover for treatment ❒

- What medications are commonly used in patients with schizophrenia and what are the doses?

_____(name) _____mg/day
_____(name) _____mg/day
_____(name) _____mg/day
_____(name) _____mg/day

- Based on your experience, how do you judge the prognosis of a treated patient after a first schizophrenic episode? (more than one answer allowed)
    - The prognosis may be favourable; one single episode with maintenance of performance level is possible ❒
    - Mostly several episodes with possible maintenance of performance level ❒
    - Mostly several episodes with progressive decline of performance level and severe course of illness ❒

- Did you participate in continuing education on schizophrenia or early schizophrenic psychosis in the past few months?
    - No ❒
    - Yes; indicate name, place and date of education ❒

_____

_____

Thank you for your participation